

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (first amended) A diagnostic system, comprising:
an emission control system comprising at least a particulate filter, said emission control system coupled downstream of an internal combustion engine;
an exhaust sensor coupled only upstream of said emission control system, providing a signal indicative of an exhaust gas pressure upstream of said emission control system; and
a computer storage medium having a computer program encoded therein, comprising:
code for estimating a pressure drop across the particulate filter based on at least said sensor signal.
2. (original) The diagnostic system as set forth in Claim 1 wherein said internal combustion engine is a diesel engine.
3. (currently amended) The diagnostic system as set [froth] forth in Claim 1 wherein said sensor is an absolute pressure sensor.
4. (original) The diagnostic system as set forth in Claim 1 wherein said emission control system further comprises an oxidation catalyst coupled upstream of the particulate filter.
5. (original) The diagnostic system as set forth in Claim 4 wherein said emission control system further comprises a NOx aftertreatment device.
6. (original) The diagnostic system as set forth in Claim 5 wherein said NOx aftertreatment device is a Lean NOx Trap (LNT).

7. (original)The system as set forth in Claim 6 wherein said LNT is coupled downstream of the particulate filter.

8. (original)The system as set forth in Claim 6 wherein said LNT is coupled upstream of the particulate filter.

9. (original)The system as set forth in Claim 5 wherein said NOx aftertreatment device is a urea-based SCR catalyst.

10. (original)The diagnostic system as set forth in Claim 1 wherein said computer storage medium further comprises code for providing an indication that particulate filter regeneration is required based on said estimated pressure drop across the particulate filter.

11. (original)The system as set forth in Claim 1 wherein said estimating of said pressure drop across the filter is further based on an atmospheric pressure.

12. (original)The system as set forth in Claim 11 wherein said estimating of said pressure drop across the filter is further based on a model of a pressure drop across said oxidation catalyst.

13. (original)The system as set forth in Claim 12 wherein said estimating of said pressure drop across the filter is further based on a model of a pressure drop across said Lean NOx Trap.

14. (original)The system as set forth in Claim 13 wherein said estimating of said pressure drop across the filter is further based on a model of a pressure drop across a muffler.

15. (first amended)A diagnostic method for an exhaust gas aftertreatment system coupled downstream of an internal combustion engine, the system comprising at least a particulate filter, the method comprising:

measuring an exhaust gas pressure upstream of the exhaust gas aftertreatment system based on a signal from an exhaust sensor coupled only upstream of the exhaust gas aftertreatment system; and estimating a pressure drop across the particulate filter based at least on said measured upstream exhaust gas pressure.

16. (original)The method as set forth in Claim 15 wherein the engine is a diesel engine.

17. (original)The method as set forth in Claim 16 wherein the exhaust gas aftertreatment system further comprises an oxidation catalyst coupled upstream of the particulate filter.

18. (currently amended)The method as set forth in Claim 13 wherein the [emission control]exhaust gas aftertreatment system further comprises a NOx aftertreatment device.

19. (original)The method as set forth in Claim 15 wherein said estimating is further based on an atmospheric pressure.

20. (original)The method as set forth in Claim 19 wherein said estimating is further based on mass airflow.

21. (original)The method as set forth in Claim 20 wherein said estimating is further based on a pressure drop across said oxidation catalyst.

22. (original)The method as set forth in Claim 21 wherein said estimating is further based on pressure drop across said lean NOx trap.

23. (original)The method as set forth in Claim 22 wherein said estimating is further based on a pressure drop across a muffler.

24. (currently amended) An emission control system for a diesel engine, comprising:

- an oxidation catalyst coupled downstream of the engine;
- a particulate filter coupled downstream of said oxidation catalyst;
- a lean NOx trap coupled downstream of said particulate filter;

and

- a computer providing an indication that particulate filter regeneration is required based at least on a [measurement of an exhaust gas pressure upstream of said oxidation catalyst] signal from an exhaust gas sensor coupled only upstream of said oxidation catalyst, said computer further regenerating said particulate filter in response to said indication.

25. (new) An emission control system coupled downstream of an internal combustion engine, comprising:

- a first device;
- a second device coupled upstream of said first device;
- a sensor coupled upstream of said second device; and
- a computer storage medium having a computer program encoded therein, comprising:

- code for regenerating said first device based on a signal provided by said sensor coupled upstream of said second device.

26. (new) The system as set forth in Claim 25 wherein the engine is a diesel engine.

27. (new) The system as set forth in Claim 26 wherein said first device is an oxidation catalyst.

28. (new) The system as set forth in Claim 27 wherein said second device is a diesel particulate filter.

29. (new) The system as set forth in Claim 28 wherein said signal provided by said sensor coupled upstream of said oxidation catalyst is indicative of an exhaust gas pressure upstream of said diesel particulate filter.

29. (new) The system as set forth in Claim 29 wherein said sensor is an absolute pressure sensor.

30. (new) The system as set forth in Claim 30 wherein said code for regenerating said particulate filter is further based on an atmospheric pressure.

32. (new) The system as set forth in Claim 31 wherein said atmospheric pressure is calculated based on a Manifold Absolute Pressure sensor reading during vehicle start.